

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau.



(43) International Publication Date
9 June 2005 (09.06.2005)

PCT

(10) International Publication Number
WO 2005/052302 A2

(51) International Patent Classification⁷: **E21B**
(21) International Application Number:
PCT/GB2004/004745
(22) International Filing Date:
12 November 2004 (12.11.2004)
(25) Filing Language: English
(26) Publication Language: English
(30) Priority Data:
0326457.9 13 November 2003 (13.11.2003) GB

(71) Applicant (for all designated States except US): **RED SPIDER TECHNOLOGY LIMITED** [GB/GB]; Westhill Business Centre, Arnhall Business Park, Westhill, Aberdeen AB32 6UF (GB).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **REID, Michael, Adam** [GB/GB]; 23 Cromer Gardens, Kingswells, Aberdeen AB15 8TF (GB).

(74) Agent: **KENNEDYS PATENT AGENCY LIMITED**; Floor 5, Queens House, 19 St. Vincent Place, Glasgow G1 2DT (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **ACTUATING MECHANISM**

(57) Abstract: An actuating mechanism for use in a tool such as a plug used in oil and gas wells. The mechanism being operable under pressure in the well bore to set the plug in a first natural closed state for a pressure under a predetermined pressure range; a second closed state wherein the plug is locked closed regardless of the pressure; and a third open state by increasing the pressure to the predetermined pressure range and holding the pressure in the range for a predetermined time. Electronic and mechanical, dual piston, actuating mechanisms are described as is a method of controlling fluid flow in a well bore using the plug and performing a pressure test against the plug.

WO 2005/052302 A2